JungleSIM S1M Screen Module - Datasheet

Terrarium controller with e-paper display, Wi-Fi and wireless sensors



R2 The S1M is the controller of a JungleSIM: one per terrarium is recommended, and one S1M can also run several terrariums that share the same climate (a system in the app). Its 8 Shelly plugs are per controller, not per terrarium. It reads the JungleSIM wireless sensors, switches up to eight Shelly smart plugs on day, night and season schedules and keeps working without the internet. Settings come from the JungleSIM app; the e-paper display and five buttons work right at the tank.

Features

- 3.7 inch e-paper display: readable in daylight, no glow at night, keeps its picture without power
- Up to 8 Shelly smart plugs (light, heater, mister, rain, fogger, fans), switched over the local Wi-Fi
- JungleSIM wireless sensors over ESP-NOW (no router needed between sensor and S1M)
- Day, night and season targets; alerts for too hot, too cold, too humid, too dry, sensor lost, plug lost
- Feeding plan and care reminders; Feed and Clean buttons log what you did
- Real-time clock with backup cell: schedules keep running after a power cut, also offline
- microSD card for settings and logs
- Firmware updates over the air; the S1M also updates its sensors
- Wall mounting with two keyholes

Electrical

Parameter	Value
Supply	5 V DC (4.75-5.25 V) via USB-C, sink only (CC 5.1 k to GND)
Current	typ. 0.1 A, max. 0.5 A (Wi-Fi transmit peaks)
Recommended power supply	CE-marked USB power supply 5 V, 1-3 A, to EN IEC 62368-1
Internal rail	3.3 V, synchronous buck AP63203 (2 A)
USB data	USB 2.0 full speed (service only), ESD protection USBLC6-2SC6
Protection class	III (SELV), circuits ES1 / PS1 to EN IEC 62368-1
Backup cell	CR2032 lithium coin cell, 3 V, in a holder inside the screwed case

Radio

Parameter	Value
Module	Espressif ESP32-S3-WROOM-1 (CE type-examination certificate, Eurofins NB 0980)
Standard	IEEE 802.11 b/g/n (2.4 GHz, 20 MHz), ESP-NOW
Frequency band	2400-2483.5 MHz (channels 1-13)

Parameter	Value
Max. transmit power	20 dBm e.i.r.p. (firmware limit)
Antenna	PCB antenna on the module, max. gain 2.33 dBi
Bluetooth	present in the module, switched off by the firmware
Security	WPA2-PSK Wi-Fi via WPS push button; TLS with certificate check to the cloud and the update server

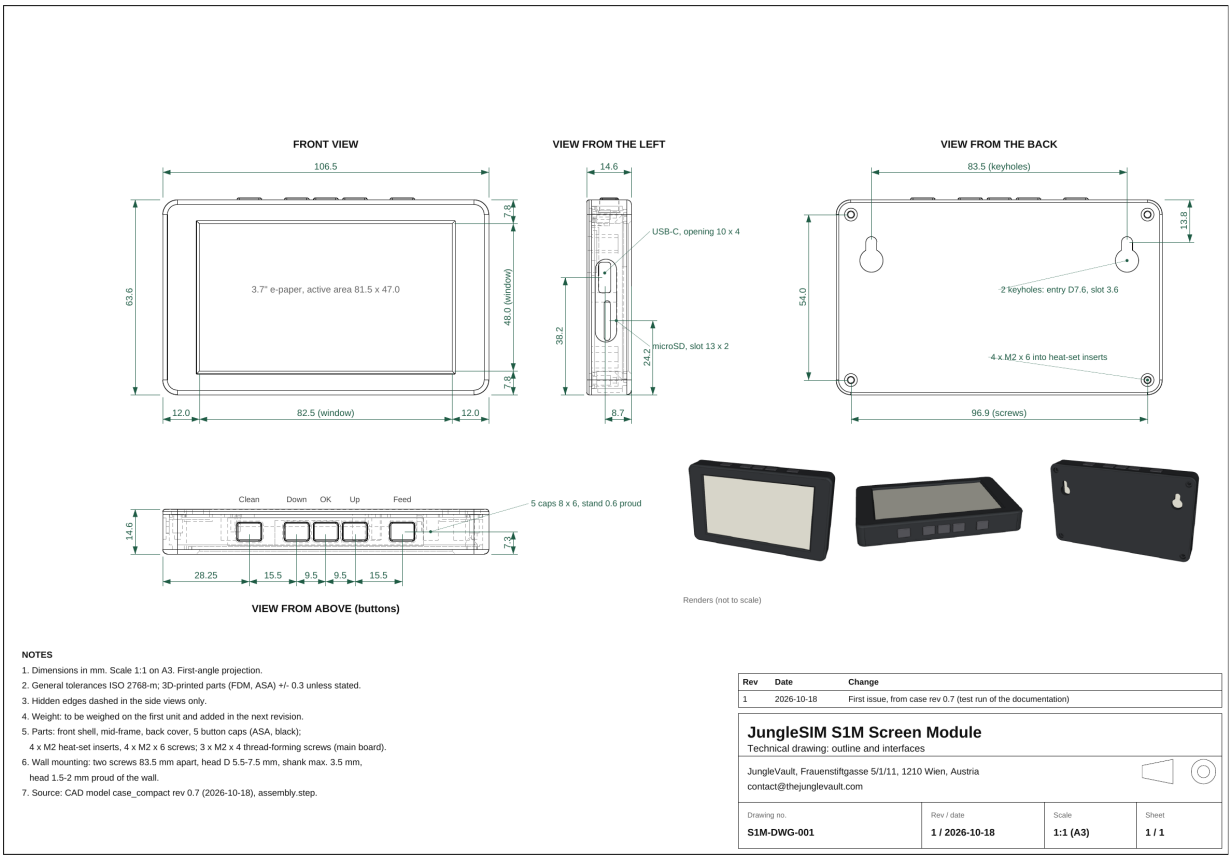
Display, controls, storage

Parameter	Value
Display	Good Display GDEY037T03, 3.7 inch, 240 x 416 pixels, black / white, partial refresh
Viewing window	82.5 x 48.0 mm (active area 81.5 x 47.0 mm)
Buttons	5 (Clean, Down, OK, Up, Feed), tactile switches on the top face
Clock	DS3231M, +/- 5 ppm (about 2.6 minutes a year), set from the internet when online
Storage	microSD, push-push socket, FAT32, up to 32 GB

Mechanical and environment

Parameter	Value
Dimensions	106.5 x 63.6 x 14.6 mm (buttons 0.6 mm proud)
Weight	to be weighed on the first unit
Case	ASA, black, 3D printed; 4 x M2 screws into heat-set inserts
Mounting	2 keyholes 83.5 mm apart (screw head 5.5-7.5 mm) or free standing
Ingress protection	IP20, indoor use in dry rooms
Operating	0 to 40 °C, max. 85 % RH, non-condensing
Storage	-10 to 50 °C

Drawing



Outline drawing S1M-DWG-001 rev 1 (the A3 drawing is a separate download)

Ordering information

Item	Contents
JungleSIM S1M Screen Module	S1M in its case, USB-C cable, quick guide, safety sheet, claim-code sticker

Compliance

CE (RED 2014/53/EU, RoHS 2011/65/EU). Marked with the crossed-out wheelie bin (WEEE 2012/19/EU). Manufacturer: JungleVault, Frauenstiftgasse 5/1/11, 1210 Wien, Austria, contact@thejunglevault.com.

Specifications may change; the newest datasheet is on thejunglevault.com.

Revisions

Rev	Date	Changes
2	2026-10-27	Up to 8 Shelly plugs per controller, one controller per terrarium recommended (it can run several).
1	2026-10-18	First issue (documentation test run), hardware rev 1.4, case rev 0.7.